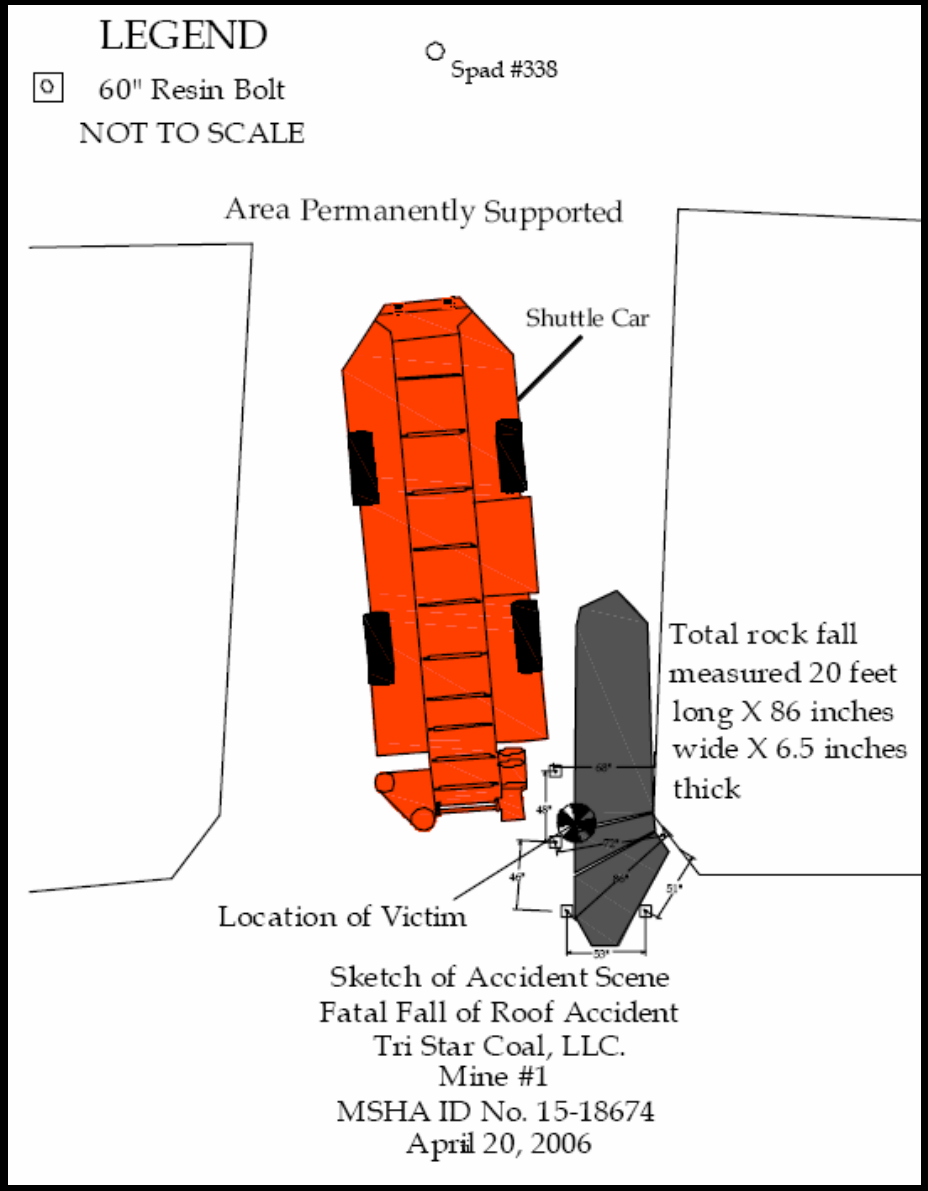
*This presentation is for illustrative and **general** educational purposes only and is not intended to substitute for the official MSHA Investigation Report analysis nor is it intended to provide the sole foundation, if any, for any related enforcement actions.*

GENERAL INFORMATION

Coal Mine Fatal Accident 2006-25

Operator:	Tri Star Coal L.L.C.
Mine:	No. 1
Accident Date:	April 20, 2006
Classification:	Fall of Roof
Location:	Dist. 6, Pike County, Kentucky
Mine Type:	Underground Coal Mine
Employment:	9
Production:	1,000 Tons/Day

ACCIDENT DESCRIPTION



On April 20, 2006, a 28-year-old shuttle car operator, was fatally injured in a roof fall accident on the 002-0 MMU Section.

The accident occurred as the victim was returning to his shuttle car after moving the cable anchor location and scouting his route of travel to the continuous mining machine. A section of roof rock measuring approximately 20 feet by 86 inches by 6.5 inches thick fell from between the roof bolts and the coal rib. The rock struck him pinning him against the mine floor, causing fatal crushing injuries.

ROOT CAUSE ANALYSIS

Causal Factor: Mine management did not ensure that the approved roof control plan was being complied with on the 002-0 MMU working section. Obvious excessive entry width and bolt spacing were present in the No. 6 heading of the 002-0 MMU working section. This condition was present for at least 3 days at the section dumping point. The entry width was approximately 22 to 23 feet and the distance between the coal rib and the roof bolts ranged between 51 inches and 86 inches over a distance of approximately 12 feet in the No. 6 heading. The approved roof control plan specifies a maximum entry width of 20 feet and maximum bolt spacing of 4 feet between the roof bolts and the coal rib. No additional support was installed to correct this obvious hazardous condition.

Corrective Action: All persons working at this mine were given additional training covering the roof control plan and identification and correction of roof hazards. Additionally the roof control plan was revised to reduce the entry widths to 18 feet and reduce the distance between the roof bolts and the rib to 3 feet. All mine equipment was removed from the area inby survey station 336 where the accident occurred, breaker timbers were set across each entry and the area was posted with danger signs.

ROOT CAUSE ANALYSIS

Causal Factor: Mine management did not ensure that adequate pre-shift examinations were being conducted to identify hazardous conditions and to implement corrective measures. The pre-shift examination conducted on each working shift between April 16, 2006 and April 20, 2006, in the haulage way of the 002-0 MMU working section failed to detect and subsequently correct the hazardous roof condition created by the excessive entry width and wide roof bolt spacing which existed in the No. 6 heading. This condition had existed for at least 3 days at the section dumping point.

Corrective Action: The certified examiners conducting examinations at this mine received additional training relative to identifying hazards associated with changing roof conditions and the specifications contained in the roof control plan.

ROOT CAUSE ANALYSIS

Causal Factor: Mine management did not ensure that adequate on-shift examinations were being conducted to identify hazardous conditions and to implement corrective measures. The on-shift examinations conducted on each working shift between April 16, 2006 and April 20, 2006, in the haulage way of the 002-0 MMU working section failed to detect and subsequently correct the hazardous roof conditions created by the excessive entry width and wide roof bolt spacing which existed in the No. 6 heading.

Corrective Action: The operator had all working places and work areas examined and hazardous conditions were recorded. All underground personnel were trained in workplace examination and recognizing hazardous roof conditions.

ENFORCEMENT ACTIONS

§104(d)(1) Order, No. 7425542, was issued to Tri Star Coal L.L.C. for a violation of 30 CFR 75.220(a)(1)

The approved roof control plan was not being complied with on the 002-0 MMU working section. Obvious excessive entry width and bolt spacing were present in the No. 5 heading of the 002-0 MMU working section. This condition was present for at least 3 days at the section dumping point. The entry width was approximately 22 to 23 feet and the distance between the coal rib and the roof bolts ranged between 51 inches and 86 inches over a distance of approximately 16 feet in the No. 5 heading. The approved roof control plan specifies a maximum entry width of 20 feet and maximum bolt spacing of 4 feet between the roof bolts and the coal rib. No additional roof support was installed to correct this obvious hazardous condition.

This area was required to be examined as part of the pre-shift and on-shift examinations made on each working shift for at least 3 days. No hazards related to this area were recorded in the pre-shift or on-shift examination records.

ENFORCEMENT ACTIONS

§104(d)(1) Order, No. 7425433, was issued to Tri Star Coal L.L.C. for a violation of 30 CFR 75.362.

The certified persons conducting on-shift examinations on each working shift between April 18, 2006 and April 20, 2006 in the haulage way of the 002-0 MMU working section failed to detect and subsequently correct the hazardous roof condition created by the excessive entry width and wide roof bolt spacing which existed in the No. 5 heading. This condition had existed for at least 3 days at the section dumping point. The entry width was approximately 22 to 23 feet and the distance between the coal rib and the roof bolts ranged between 51 inches and 86 inches over a distance of approximately 16 feet in the No. 5 heading. The approved roof control plan specifies a maximum entry width of 20 feet and maximum bolt spacing of 4 feet between the roof bolts and the coal rib. No additional roof support was installed to correct this obvious hazardous condition.

This area was required to be examined as part of the on-shift examinations made on each working shift for at least 3 days. No hazards related to this area were recorded in the on-shift examination records."

ENFORCEMENT ACTIONS

§104(d)(1) Order, No. 7425433, was issued to Tri Star Coal L.L.C. for a violation of 30 CFR 75.360.

The certified persons conducting pre-shift examinations on each working shift between April 18, 2006, and April 20, 2006, in the haulage way of the 002-0 MMU working section failed to detect and subsequently correct the hazardous roof condition created by the excessive entry width and wide roof bolt spacing which existed in the No. 5 heading. This condition had existed for at least 3 days at the section dumping point. The entry width was approximately 22 to 23 feet and the distance between the coal rib and the roof bolts ranged between 51 inches and 86 inches over a distance of approximately 16 feet in the No. 5 heading. The approved roof control plan specifies a maximum entry width of 20 feet and maximum bolt spacing of 4 feet between the roof bolts and the coal rib. No additional roof support was installed to correct this obvious hazardous condition. This area was required to be examined as part of the pre-shift examinations made prior to each working shift for at least 3 days. No hazards related to this area were recorded in the on-shift examination records."

BEST PRACTICES

- Remain alert for changing roof conditions. Add additional support where entry width and roof bolt spacing exceed roof control plan specifications.
- Conduct thorough examinations in areas where miners will work or travel. "Danger-Off" areas where hazards exist until appropriate corrective actions can be taken.
- Take down any loose roof or ribs and report any unsafe roof or rib conditions immediately to the section foreman.
- Do not store items such as water jugs on rib ledges.
- Develop processes, involving all miners, designed to proactively identify and eliminate hazards and unacceptable risks.